Abstract

SHARING LINE BANDWIDTH AMONG VIRTUAL CIRCUITS IN AN ATM DEVICE

Support for over-subscription while maintaining priorities (e.g., CBR, VBR RT,

5   VBR nRT, UBR, in that order from high to low) and ensuring that each virtual circuit

does not exceed any allocated bandwidth. In an embodiment, a line slot credit is

maintained associated with each virtual circuit, which is incremented by a token value

(equivalent to a cell slot for transmission on the communication path) in each cell slot.

When the line slot credit equals or exceeds a inter-cell delay for the virtual circuit, a VC-

10   credit associated with the virtual circuit is incremented unless the VC-credit value would

exceed any maximum threshold value. Cells are transmitted (for VC-types with allocated

bandwidths) if the associated VC-credit is at least one, while maintaining priorities by

VC-type. PCR may also be enforced on VBR and UBR VC-types.